Iranian Journal of Applied Language Studies
University of Sistan and Baluchestan
Uppsala University
Print ISSN: 2008-5494 Online ISSN: 2322-3650
Homepage: https://ijals.usb.ac.ir

The Development of Collaborative Course Design Questionnaire: A Measure of Students' Attitudes towards Collaborative Course Design and Barriers to its Implementation

Bahroz Mawlood[1], Mahdi Hasanpour Ghaleh[2], Zahra Dolati[3], Amir Mahdavi Zafarqandi[4]

[1] *Corresponding author,* Ph.D. Candidate, Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran, Email: bahroz.mawlood@gmail.com

[2] Ph.D. Candidate, Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran, Email: mahdihasanpourofficial@gmail.com

[3] Ph.D. Candidate, Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran, Email: dolati.zhr@gmail.com

[4] Associate Professor, Department of English Language and Literature, Faculty of Literature and Humanities, University of Guilan, Rasht, Iran, Email: mahdavi1339@gmail.com

Abstract

This research aims to develop a questionnaire that measures students' attitudes toward collaborative course design and identifies any barriers that might hinder student participation in course design. The questionnaire was developed in four phases. First, an item pool was created based on experts' opinions, relevant literature, and the researchers' experience. Second, the items were classified into two main sections: "attitudes" and "barriers", with the latter further divided into five subcategories (social and cultural, educational and institutional, individual, practical, and attitudinal). The content validity of the questionnaire was assessed, with all items and subcategories achieving CVR>0.59 and CVI>0.79, thus surpassing the minimum required threshold. Third, the questionnaire was piloted with 330 students. The construct validity of the Collaborative Course Design Questionnaire (CCDQ) was confirmed through exploratory factor analysis (EFA) using Principal Component Analysis (PCA) as the extraction method, along with Varimax rotation, which identified six factors explaining 71.536% of the variance in the data. Finally, Cronbach's alpha was calculated, yielding reliability indices ranging from 0.971 to 0.627, indicating internal consistency and reliability of the items within each construct. The findings suggest that the Collaborative Course Design Questionnaire is a valid and reliable instrument suitable for use with senior high school students.

Keywords: barriers, collaborative course design, scale development, senior high school students, student attitudes

Received: June 10, 2024 Revised: October 22, 2024 Accepted: November 28, 2024 Published: March 10, 2025

Article type: Research Article DOI: 10.22111/ijals.2024.48183.2433

Publisher: University of Sistan and Baluchestan

How to cite: Mawlood, B., Hasanpour Ghaleh, M., Dolati, Z., & Mahdavi Zafarqandi, A. (2025). The development of collaborative course design questionnaire: A measure of students' attitudes towards collaborative course design and barriers to its implementation. *Iranian Journal of Applied Language Studies*, *17*(1), 115-140.
https://doi.org/10.22111/ijals.2024.48183.2433

1. Introduction

Recently, literature has emphasized the importance of students' participation in planning, designing, and developing their curriculum, advocating for their active involvement in the co-creation of their own education (Aronowitz, 1994; Collis & Moonen, 2005; Furlong & Cartmel, 2009; Grudens-Schuck, 2003; McCulloch, 2009; Rogers & Freiberg, 1969; Shor, 1992; Wilkinson & Scandrett, 2003). In higher education, research has focused extensively on students taking part in the co-creation of their learning (Cook-Sather et al., 2014; Dunne, 2016; Könings et al., 2020; Mercer-Mapstone et al., 2017), as the teacher's role has shifted from simply delivering information to actively involving students in their education (Cohen et al., 2019). This shift is based on the view that students are knowledgeable and essential collaborators in the learning and teaching process (Shor, 1992). However, this transformation presents a challenge to traditional course design approaches (Mead, 2018), which may cause teachers to hesitate in incorporating students into collaborative course design (CCD) (Bovill et al., 2011; Hutchings, 2005).

Collaborative course design, also known as co-creation, typically involves a teacher working with a small group of two to six students (Mead, 2018) to design or redesign aspects of a course, including class procedures, course objectives, instructional design, and assessment of learning (Mead, 2018). This collaborative process transforms students from passive consumers of course content into active co-designers of their learning. At the same time, teachers gain deeper insight into students' needs (Bovill et al., 2011; Mihans et al., 2008), fostering a mutual partnership between teachers and students (Mead, 2018).

Bovill et al. (2016) describe co-creation as teacher-learner collaboration aimed at enhancing learning and teaching by involving students in the design of educational materials. Co-creation promotes shared learning responsibility, empowering students to take an active role in their education. It also fosters stronger relationships not only between teachers and students but also among students themselves, as they collaboratively define the aims, methods, and outcomes of the learning process (Cook-Sather et al., 2014). However, Martens et al. (2019) argue that the extent of student involvement should be carefully planned based on the objectives of the selected collaborative approach, ensuring a successful implementation. While collaborative course design may not be suitable for every educational setting, if sufficient time and educational support are available, it can serve as a powerful tool for enhancing learning (Delpish et al., 2010). Therefore, it is essential to investigate students' attitudes toward collaborative course design and identify any obstacles that may hinder their participation. This study was designed to develop a reliable and valid questionnaire to examine students' perceptions of collaborative course design and explore the barriers that might cause students to lose interest in participating in course design.

2. Review of Related Literature

The inclusion of students in the process of collaborative course design (CCD) has been shown to offer several benefits to students, such as increasing commitment to their learning experience (Bovill et al., 2015; McKinney et al., 2010), enhancing confidence in verbalizing opinions and attitudes in educational contexts (Delpish et al., 2010), improving assessment performance (Bovill et al., 2011), and broadening students' perspectives and knowledge of learning (Handelzalts, 2009). CCD also benefits teachers by providing a better understanding of what and how learners need to learn (Kane & Chimwayange, 2014) and allowing teachers to identify challenges in their current instructional practices (Handelzalts, 2009).

Although collaborative course design offers numerous advantages, there are pitfalls that need to be addressed before implementing CCD (Bovill et al., 2011, 2015). Mead (2018) identifies several challenges associated with involving students in the CCD process. From the students' perspective, teachers must determine which students are genuinely interested in participating, as not all students may be eager to engage. Additionally, some students may withdraw halfway through the co-design process, leading to potential project failure. Moreover, if students feel that their opinions are not valued, they may become discouraged. Other students may be reluctant to participate because they have traditionally expected the teacher to assume full responsibility for the teaching and learning process. From the teachers' perspective, some may struggle to share responsibility or build collaborative relationships with students, as this shift challenges their traditional views of the teacher-student dynamic. Furthermore, institutional challenges may arise, as some educational systems may not support curriculum co-creation (Könings et al., 2020).

Additionally, certain teachers face heavy workloads or long working hours, which can make it difficult to involve students in curriculum design (Jafar, 2016). To mitigate these challenges, Mead (2018) offers several recommendations. Teachers new to student collaboration can start with smaller collaborative projects before engaging in full-scale CCD. Moreover, neither teachers nor students should feel pressured to participate in the process. Teachers should encourage and appreciate each willing student, valuing their contributions, as student participation is integral to the success of CCD. Finally, teachers should recognize that collaborative tasks are an iterative process, and a single experience will not immediately transform curriculum design.

While existing literature has explored areas such as cooperatively written articles (Roen & Mittan, 1992; Yancey & Spooner, 1998), collaborative research (Bulger et al., 2011; Neff et al., 2012), the value of cooperative work in teacher teams (Barratt et al., 2011; Brunk-Chavez & Miller, 2007), collaboratively designed face-to-face scientific writing courses (Combs et al., 2015), and whole-class co-design in higher education (Bryson et al., 2015; Mercer-Mapstone et al., 2017), there is a paucity of research on students' attitudes toward collaborative course design and the factors contributing to their reluctance to participate in co-designing instructional materials. This gap in research needs to be addressed. The present study aimed to fill this gap by developing a

Collaborative Course Design Questionnaire, focusing on students' attitudes toward CCD and the barriers that may hinder their participation. The questionnaire was designed based on existing research on CCD, insights from educators and curriculum design professionals, and the researchers' experience within the specific educational context in which the questionnaire is intended to be administered.

3. Method

This research is a scale development study aimed at developing a Likert-type scale to investigate students' attitudes toward collaborative course design and identify the barriers that may impede students' collaboration in the co-creation of a course. As the most commonly used instrument for gathering data on affective variables, a Likert-type scale is a psychometric tool that examines respondents' opinions by asking them to select from multiple categories that best describe their attitudes or feelings about the issue in question (Nemoto & Beglar, 2014).

The scale development study began in the second semester of the 2022–2023 academic year. The questionnaire was developed through four phases: item pool development, scale refinement and content validity study, piloting and construct validity study, and reliability study. All participants provided informed consent before participating.

3.1. Phase One: Item Pool Development

In order to develop an item pool for the Collaborative Course Design Questionnaire (CCDQ), an open-ended questionnaire was distributed to a group of experts and instructors in the field of education and curriculum design (see Appendix A) who implement collaborative course design in their classes. In this phase, the study involved five male participants, all of whom held PhD degrees. The average age of the participants was 44 years, with an average of 18.4 years of experience, thus bringing a wealth of knowledge and expertise to the study. These participants were selected using convenience sampling, which allowed for the inclusion of readily accessible individuals who were willing to participate in the study (Ary et al., 2019).

The open-ended questionnaire in this phase consisted of four questions regarding students' attitudes toward collaborative course design, its applicability, its potential limitations, and the barriers that might hinder students' participation. For the qualitative data analysis, responses were carefully examined using thematic analysis. Each idea expressed by the participants was meticulously reviewed, ensuring that all viewpoints were considered in the item development process for the Collaborative Course Design Questionnaire. Recurring themes and overlapping ideas were identified and grouped together to avoid redundancy. Based on a comprehensive range of participant perspectives, a review of the literature, and the researchers' experience in the field,

30 items were written for the Collaborative Course Design Questionnaire and sorted into different subcategories.

3.2. Phase Two: Scale Refinement and Content Validity Study

The first draft of the Collaborative Course Design Questionnaire (CCDQ) comprises two main sections: "attitudes" and "barriers". To measure students' attitudes toward collaborative course design, ten statements were formulated. The remaining 20 statements were designed to identify barriers that may hinder students' participation, which were further categorized into five subcategories: "social and cultural barriers," "educational and institutional barriers," "individual barriers," "practical barriers," and "attitudinal barriers."

To analyze the validity of the CCDQ, a panel of 11 experts in education and applied linguistics evaluated the statements and provided comments on items that required revision (see Appendix B). They also assessed the relevance and necessity of each item. Based on their evaluations and ratings, the researchers calculated the Content Validity Ratio (CVR), as proposed by Lawshe (1975), and the Content Validity Index (CVI), as proposed by Waltz and Bausell (1981).

3.3. Phase Three: Piloting and Construct Validity Study

To pilot the instrument, the items in the first draft of the questionnaire were rearranged to ensure that statements from the same subcategory did not appear consecutively (see Appendix C). The statements were then translated into Persian by two EFL teachers with extensive translation experience and one certified translator, followed by back-translation by one experienced EFL teacher and one certified translator. The purpose of translating the instrument into the native language of the target population was to ensure that all participants fully understood the statements. Subsequently, five EFL university professors evaluated the content validity of the statements to ensure linguistic clarity and content relevance.

It is noteworthy that this research followed established standards of trustworthiness in qualitative inquiry (Lincoln & Guba, 1985), specifically addressing credibility, transferability, dependability, and confirmability. First, credibility was ensured through method triangulation (Denzin, 1978), by collecting and comparing data gathered from expert interviews, related literature, and researchers' experience. Second, for transferability, a contextual description of the instrument's use was provided to enable readers and researchers to determine whether the findings were applicable to other contexts and whether the questionnaire was usable in different settings (Demarrais et al., 2024, p. 290). Third, dependability was maintained through comprehensive documentation of the research process. Finally, confirmability was ensured by establishing adequate records throughout the research process (Demarrais et al., 2024). Throughout the study,

ethical considerations, including participant anonymity and data confidentiality, were strictly upheld to prevent any potential harm to participants.

The items were first tested by five students with similar characteristics to those of the final sample using verbal protocol analysis. These students were asked to carefully read the items and describe their understanding of them, allowing the researchers to identify and correct any misinterpretations caused by translation. Subsequently, the questionnaire was administered to the intended sample. Exploratory factor analysis (EFA) was conducted using SPSS (Version 26), employing the extraction method of Principal Component Analysis (PCA) and Varimax rotation to examine the construct validity of the Collaborative Course Design Questionnaire.

3.4. Phase Four: Reliability Study

The reliability analysis for each construct in the Collaborative Course Design Questionnaire was estimated using Cronbach's alpha. Cronbach's alpha is a statistical measure that assesses the internal consistency or reliability of a set of items in a questionnaire. It indicates how well the items within a construct correlate with each other, providing a measure of the construct's reliability (Griffin, 2009).

4. Results

4.1. Results of the Content Validity Analysis

The main objective of the present study was to develop a questionnaire to investigate students' attitudes toward collaborative course design and the barriers that might hinder its implementation. To achieve this, a 30-item questionnaire with two main sections ("attitudes" and "barriers") and five subcategories within the "barriers" section was developed based on data gathered from experts' opinions, relevant literature, and researchers' experience.

As previously mentioned, a panel of 11 experts was asked to evaluate each item and subcategory in terms of necessity and relevance, following the rating instructions provided by Lawshe (1975) (1=not necessary, 2=useful but not necessary, 3=necessary) and Waltz and Bausell (1981) (1=irrelevant, 2=moderately relevant, 3=relevant but requires revision, 4=totally relevant). The panel consisted of five female and six male instructors holding M.A. and Ph.D. degrees, with a mean age of 37.8 years and an average of 13.55 years of teaching experience. The expert panel in this phase was selected using convenience sampling, chosen for its practicality (Ary et al., 2019). By leveraging existing professional networks and connections, a group of highly qualified experts in the field was assembled, facilitating efficient access to the necessary expertise to inform the study's direction and content.

After collecting the data, CVR and CVI were calculated for each item and subcategory. When a Content Evaluation Panel consists of 11 members, a minimum CVR of 0.59 is required for

an item to proceed to CVI analysis. Furthermore, for an item to be considered relevant, a minimum CVI of 0.79 is required. In the Collaborative Course Design Questionnaire, all items and subcategories ("attitudes," "social and cultural barriers," "educational and institutional barriers," "individual barriers," "practical barriers," and "attitudinal barriers") obtained CVR> 0.59 and CVI >0.79 (see Appendix B). Consequently, all items were retained and revised based on feedback provided by the Evaluation Panel.

In what follows, the minimum CVR values for different panel sizes (Table 1) are presented:

Table 1

Minimum Values of CVR

Minimum Value	*Number of Panelists*
0.99	5
0.99	6
0.99	7
0.85	8
0.78	9
0.62	10
0.*59*	11
0.*56*	12
0.*54*	13
0.*51*	14

4.2. Results of Construct Validity Analysis

To pilot the Collaborative Course Design Questionnaire, it was given to 330 students with characteristics similar to those of the final population for whom the questionnaire was designed. In this pilot study, 23.9% of the participants were male (n=79), and 76.1% were female (n=251), studying in different fields of study (Humanities=53.7%, Mathematics and Physics=13.2%, Experimental Sciences =28.3%, Other=4.8%) and different grades of senior high school (Grade 10=27.4%, Grade11=31.8%, Grade12=40.8%). The following table (see Table 2) provides detailed demographic information about the participants.

Table 2

Demographic Information of the Study Participants

Gender	N	Grade Level	N	Field of Study	N
Male	79	Grade 10	14	Humanities	9
				Mathematics and Physics	3
				Experimental Sciences	2
				Other	0
		Grade 11	30	Humanities	16
				Mathematics and Physics	4
				Experimental Sciences	9
				Other	1
		Grade 12	35	Humanities	9
				Mathematics and Physics	4
				Experimental Sciences	19
				Other	3
Female	251	Grade 10	76	Humanities	72
				Mathematics and Physics	3
				Experimental Sciences	1
				Other	0
		Grade 11	75	Humanities	32
				Mathematics and Physics	28
				Experimental Sciences	12
				Other	3
		Grade 12	100	Humanities	39
				Mathematics and Physics	2
				Experimental Sciences	50
				Other	9
Total	330		330		330

The sampling method used in this phase of the study was snowball sampling, in which a group of initial participants was asked to recruit or suggest other participants from their network who met the study's criteria (i.e., senior high school students), thus expanding the sample size (Ary et al., 2019).

The construct validity of the Collaborative Course Design Questionnaire was examined via exploratory factor analysis using the extraction method of Principal Component Analysis (PCA) as well as Varimax rotation. Based on the results of the factor analysis, the 30 items of the questionnaire were categorized into six subscales. It must be noted that the condition for accepting the communality of the variables was a value greater than .30, as suggested by Field (2013).

As an initial step, to verify that the data were suited for factor analysis, the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and Bartlett's test of sphericity were conducted. The results are presented in Table 3.

Table 3

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.860
Bartlett's Test of Sphericity	Approx. Chi-Square	9103.941
	df	435
	Sig.	.000

Table 3 presents the results of the KMO measure of sampling adequacy and Bartlett's test of sphericity for the factor analysis conducted on the Collaborative Course Design Questionnaire. The KMO statistic measures the appropriateness of the data for factor analysis. It ranges from 0 to 1, with values closer to 1 indicating better suitability. The KMO measure for the sample was 0.860, which was greater than the minimum required value (i.e., KMO≥.6). This suggests that the data were generally suitable for factor analysis.

Bartlett's test of sphericity examines whether there is sufficient correlation between variables to proceed with factor analysis. The test statistic was 9,103.941, with 435 degrees of freedom and a significance level of .000 ($p<.01$). This indicates a significant correlation between the variables, supporting the use of factor analysis for the data.

Thus, the results indicate that the data were appropriate for factor analysis, as shown by the relatively high KMO measure (.860) and the significant correlation between variables, as indicated by Bartlett's test of sphericity. These findings support the use of factor analysis to further explore the underlying factors within the data.

The next step involved computing factor solutions to remove potential items with low communality values. The results are provided in Appendix D, where the communalities for each item in the Collaborative Course Design Questionnaire, both before and after extraction through PCA, are displayed. The initial communalities represent the proportion of variance in each item that can be explained by all factors combined. As shown in Table 4, all items had an initial communality of 1.000, indicating that each item initially explained 100% of its variance.

The extraction communalities display the proportion of variance in each item accounted for by the extracted factors through PCA. These values range from 0 to 1, with higher values indicating a larger proportion of variance explained. After extraction, the communalities ranged from .374 to .919. The communalities provide information about each item's contribution to the factor structure. The results imply that the items in the Collaborative Course Design Questionnaire had varying levels of communality after extraction through PCA.

Items with higher extraction communalities, closer to 1, indicate a strong relationship with the extracted factors and contribute significantly to the overall variance explained. These items include statements such as "Although collaboration can be more work and take more time, it can also be more fun and enjoyable learning when students take ownership of their own materials or at least projects" (communality=.899) and "Through collaborative course design, students feel empowered to make a difference in the course, and beyond" (communality=.919).

On the other hand, items with lower extraction communalities, closer to zero, suggest weaker relationships with the extracted factors and contribute less to the overall variance explained. These items include statements such as "Co-designing the course requires an increased awareness of the self on the part of the students, which is a challenge for them" (communality=.374) and "Students will benefit the most from a teacher-designed course and, subsequently, a teacher-centered class" (communality=.393).

Next, the number of factors was determined based on the eigenvalues and the scree plot. Subsequently, the percentage of variance explained and the eigenvalues were calculated for the questionnaire items to determine how many factors could be extracted in the overall factor analysis. The results are presented in Table 4.

Table 4

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.708	29.026	29.026	8.708	29.026	29.026	8.508
2	3.814	12.713	41.739	3.814	12.713	41.739	3.880
3	3.115	10.384	52.123	3.115	10.384	52.123	3.604
4	2.392	7.973	60.096	2.392	7.973	60.096	2.475
5	1.935	6.451	66.547	1.935	6.451	66.547	2.185
6	1.497	4.989	71.536	1.497	4.989	71.536	2.187
7	1.190	3.966	75.503				
8	.914	3.048	78.551				
9	.847	2.824	81.375				
10	.717	2.391	83.766				
11	.628	2.095	85.861				
12	.575	1.916	87.777				
13	.482	1.607	89.384				
14	.438	1.462	90.845				
15	.399	1.331	92.176				
16	.360	1.199	93.376				
17	.312	1.040	94.416				
18	.263	.877	95.293				
19	.231	.771	96.064				
20	.194	.645	96.709				
21	.159	.530	97.239				
22	.156	.520	97.759				
23	.146	.486	98.246				
24	.130	.435	98.681				
25	.115	.383	99.063				
26	.088	.294	99.357				
27	.074	.246	99.603				
28	.053	.175	99.779				
29	.040	.133	99.912				
30	.026	.088	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

The results in Table 4 provide information about the variance explained by each component in the factor analysis of the Collaborative Course Design Questionnaire.

The initial eigenvalues represent the amount of variance explained by each component before any rotation. The first component had an initial eigenvalue of 8.708, indicating that it explained the most variance in the data. Other components had decreasing eigenvalues, with the second component explaining 3.814, the third 3.115, and so on.

The extraction sums of squared loadings represent the variance explained by each component after extraction, while the rotation sums of squared loadings represent the variance explained by each component after applying the Varimax rotation method. As shown in Table 4, the rotation sums of squared loadings were very similar to the extraction sums of squared loadings, with slight differences due to the rotation process.

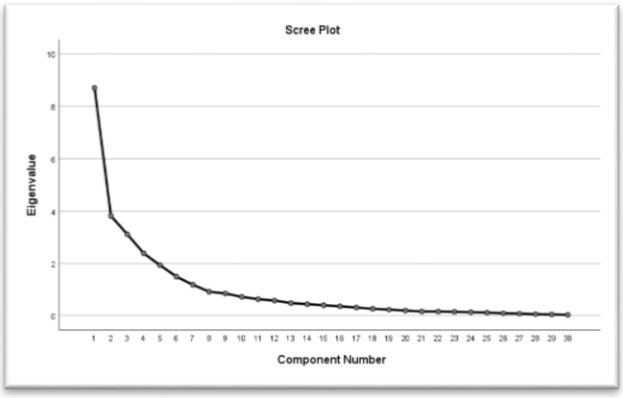
The cumulative percentages indicate the total amount of variance explained by the components included up to that point. For example, the first component explained 29.026% of the total variance, the second explained an additional 12.713%, and so on. By the end of the analysis, the first six components explained 71.536% of the total variance. Therefore, the results indicate that the first six components explained a substantial amount of the variance in the Collaborative Course Design Questionnaire.

As stated by Tabachnick and Fidell (1996), components with higher eigenvalues account for greater variance, meaning they should be retained in the dataset. Therefore, six factors that accounted for 71.536% of the total variance were chosen as the main factors for the questionnaire.

The scree plot in Figure 1 shows the eigenvalues for each factor extracted from the Collaborative Course Design Questionnaire.

Figure 1

Scree Plot



The eigenvalues represent the amount of variance in the data accounted for by each factor. The scree plot shows a steep drop in eigenvalues after the first factor, followed by a more gradual decline. This suggests that the first factor explains a large proportion of the variance in the data, while the remaining factors account for progressively less. As stated by Gorsuch (1983), in a scree plot, the appropriate number of factors for analysis corresponds to the number of factors before the plotted line sharply turns right. Based on the scree plot, a six-factor solution appears appropriate for the Collaborative Course Design Questionnaire.

In the next phase of the statistical analysis, Varimax rotation was performed to extract the main components (see Appendix E). The pattern matrix presents the factor loadings for each item on the identified components. The factor loadings represent the strength and direction of the

relationship between each statement and the underlying factors. Higher factor loadings indicate a stronger association with the corresponding factor.

In the analysis, six components or factors were extracted, numbered from 1 to 6. Statements 1 to 10 had high factor loadings on Component 1 (Attitudes), statements 11 to 14 had high factor loadings on Component 2 (Social and Cultural Barriers), and statements 15 to 19 had high factor loadings on Component 3 (Educational and Institutional Barriers). Similarly, statements 20 to 23 had high factor loadings on Component 4 (Individual Barriers), statements 24 to 26 had high factor loadings on Component 5 (Practical Barriers), and statements 27 to 30 had high factor loadings on Component 6 (Attitudinal Barriers).

The matrix in Table 5 displays the correlations between the identified components (factors) extracted from the analysis.

Table 5

Component Correlation Matrix

Component	1	2	3	4	5	6
1	1.000	.110	.171	.091	.108	.082
2	.110	1.000	.033	-.077	-.050	.097
3	.171	.033	1.000	.149	.067	-.031
4	.091	-.077	.149	1.000	.069	-.166
5	.108	-.050	.067	.069	1.000	-.100
6	.082	.097	-.031	-.166	-.100	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

As shown in Table 5, the coefficients ranged from -0.16 to 0.17, indicating minimal correlation between the factors. This suggests that each factor represents a distinct aspect of collaborative course design. Consequently, the factor analysis of the Collaborative Course Design Questionnaire identified six factors that accounted for 71.536% of the variance in the data. These factors represent different dimensions of collaborative course design, including attitudes toward co-designing the course, social and cultural barriers (e.g., viewing teachers as authorities), educational and institutional barriers (e.g., lack of student training in course design), individual barriers (e.g., lack of student orientation), practical barriers (e.g., lack of teacher guidance), and attitudinal barriers (e.g., preference for a teacher-designed course).

4.3. Results of the Reliability Analysis

In the next step, the internal consistency of the identified factors was assessed using Cronbach's Alpha, a statistical measure that evaluates the reliability of a set of items within a questionnaire. Cronbach's Alpha determines the extent to which the items within a given construct correlate with each other, providing an indication of the construct's overall reliability (Griffin,

2009). Table 6 presents the reliability estimates for the six identified factors, as calculated using Cronbach's Alpha.

Table 6

Reliability Statistics

Components	Cronbach's Alpha	N of Items
Attitudes	.971	10
Social and Cultural Barriers	.902	4
Educational and Institutional Barriers	.908	5
Individual Barriers	.698	4
Practical Barriers	.715	3
Attitudinal Barriers	.627	4

The Cronbach's Alpha values were interpreted following the reliability guidelines proposed by Streiner (2003). These guidelines are summarized in Table 7.

Table 7

Level of Reliability Bbased on Alpha Value (Adopted from Streiner, 2003)

Alpha	Relative Level
0,00 - 0,20	Less Reliable
>0,20 - 0,40	Somewhat Reliable
>0,40 - 0,60	Quite Reliable
>0,60 - 0,80	Reliable
>0,80 - 1,00	Very Reliable

According to Streiner's (2003) guideline, the "Attitudes" construct demonstrated very high internal consistency, with a Cronbach's Alpha coefficient of .971. Similarly, the "Social and Cultural Barriers" construct exhibited very high internal consistency (α=.902), as did "Educational and Institutional Barriers" (α=.908). The "Individual Barriers" construct showed acceptable reliability, with α=.698, while "Practical Barriers" demonstrated adequate reliability (α=.715). Finally, the "Attitudinal Barriers" construct had a Cronbach's Alpha coefficient of .627, indicating acceptable internal consistency.

5. Discussion

This study aimed to develop and validate the Collaborative Course Design Questionnaire (CCDQ). The content validity of the questionnaire items was assessed based on their necessity and relevance, following the guidelines proposed by Lawshe (1975) and Waltz & Brusell (1981). The results confirmed that all items met the necessary criteria for content validity. Additionally, exploratory factor analysis (EFA) was conducted to establish construct validity, identifying six factors that represented various aspects of collaborative course design. These factors collectively explained 71.536% of the variance in the data after extracting the main components using Varimax rotation. Furthermore, Cronbach's Alpha was used to assess the reliability of the items, with values

ranging from 0.627 (lowest) to 0.971 (highest), indicating reliability levels from acceptable to very high according to Streiner (2003).

The theoretical foundation of the CCDQ can be contextualized in relation to previous studies on collaborative course design. The questionnaire aligns with prior research emphasizing the transformative nature of education for both students and faculty. Specifically, it reflects the co-creation of learning experiences (Bovill & Bully, 2011), the role of students as educational co-researchers (Hanna-Benson et al., 2020), and the fostering of positive group relationships (Owen & Wasiuk, 2021). Additionally, it resonates with studies highlighting the increase in student engagement (Mead, 2018), the development of constructive co-creation processes (Könings et al., 2020), the acquisition of new skills through co-design (Kim et al., 2022), and the enhancement of intrinsic motivation (Hess, 2008). Beyond these established findings, the CCDQ also addresses student disengagement, potentially linked to challenges in power-sharing between teachers and students in EFL classrooms.

The significance of developing the CCDQ lies in its ability to capture students' attitudes toward collaborative course design, which play a critical role in teaching and classroom decision-making. Attitude, defined as a propositional motivational concept, serves as the "affective associate of a mental representation" (Greenwald, 2014, p. 433). Since attitudes influence students' engagement and motivation, understanding them enables teachers to tailor instruction to better align with students' needs, fostering greater participation. As noted by Anghelache (2013), both the classroom environment and students' commitment to and acceptance of tasks are shaped by their attitudes. Positive attitudes contribute to a supportive and inclusive learning environment, where students feel comfortable expressing themselves, taking risks, and collaborating with peers. By using the CCDQ, educators can gain insights into students' perceptions, allowing them to cultivate a classroom culture that enhances learning and personal growth.

Empirical research further supports the idea that student motivation and performance improve when they are given opportunities to contribute to instructional design (Hess, 2008; Nihuka, 2019). Rather than being viewed as passive recipients of information, students should be recognized as active participants whose needs and preferences must be considered (Shayegan Far, 2023). However, as with any collaborative process, some individuals may exhibit reluctance or resistance to participating in course design. The CCDQ, having demonstrated strong validity and reliability, provides a useful instrument for investigating the underlying reasons behind such resistance, offering valuable insights for fostering more effective student-teacher collaboration.

6. Conclusions

The primary objective of this research was to develop a reliable and valid scale for measuring students' attitudes toward collaborative course design (CCD), an approach that has proven effective in practice, while also identifying barriers that may contribute to students' reluctance to

participate in course design. The findings confirmed that the Collaborative Course Design Questionnaire (CCDQ), consisting of 30 items and five subcategories in the barriers section (social and cultural barriers, educational and institutional barriers, individual barriers, practical barriers, and attitudinal barriers), demonstrated strong validity and excellent reliability.

The scale is particularly suitable for senior high school students and, with minor revisions, can also be adapted for undergraduate students. Its results hold significant implications for policymakers, curriculum designers, educational managers, and teachers, equipping them with a clear understanding of students' attitudes toward CCD and the obstacles hindering its implementation. This awareness enables stakeholders to take informed steps to address negative attitudes, reduce barriers, and maximize the benefits of CCD.

The CCDQ offers valuable insights into students' perceptions of various aspects of collaborative course design, including their learning experiences, teachers' roles, instructional methods, classroom environment, and interactions with peers and instructors. Understanding students' perspectives on these factors allows educators to identify strengths and areas for improvement. The feedback collected through the CCDQ is particularly useful for enhancing teaching practices, refining curriculum design, and optimizing learning environments. By adopting a data-driven approach, educators can make evidence-based decisions that align instructional strategies and classroom policies with students' needs and preferences.

Finally, inviting students to participate in the CCDQ reinforces the value of their opinions and demonstrates that their feedback can drive meaningful changes in the educational setting. This sense of ownership fosters greater engagement and encourages students to take a more active role in their learning journey.

Acknowledgements

We would like to express our warmest thanks to Dr. Abdorreza Tahriri who helped us in the validation process of our questionnaire. His continuous support and altruistic character always inspire us. Our gratitude goes to our colleagues, Hezha Bakhtiyar Abdullah, Hadise Hashemi, Zeinab Yousefi, and Roghaye Yahyaei for their cooperation in the data collection process. Special thanks go to our students for their participation in this study. We want them to know that that all our efforts are directed at giving them a better educational experience.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

This study received no specific grant or funding from any funding agency in the public, commercial, or not-for-profit sectors.

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Appendix A

Collaborative Course Design Questionnaire

Dear Professor,

We are requesting your participation in this brief survey. The survey is being done by three PhD students majoring in English Language Teaching at the University of Guilan. Your responses, as an educator and expert in the field, will help us develop the final "Collaborative Course Design Questionnaire" which attempts to investigate students' attitudes toward "Collaborative Course Design" and identify any barriers that might hinder student contribution in this case. Your responses will be used for research purposes only, and the responses will be kept confidential. The survey data will be reported in a summary fashion only and will not identify any individual person. No identifying information will be provided to the third parties. Thank you so much for your time and cooperation in assisting us in this research undertaking.

Section 1:

Please fill in the required information.

1. Gender: Male ☐ Female ☐

2. Degree: B.A. ☐ M.A. ☐ PhD. ☐

3. Age: ---------- years

4. Teaching experience: ---------- years

Section 2:

Please provide your insights regarding the following questions:

1- Have you ever involved your students in the co-creation of your instructional course material/ syllabus? If yes, please explain.

----------What do you think students' attitudes are toward "Collaborative Course Design" defined as incorporating students' viewpoints and preferences, namely, their significant input, into the course design?

----------How applicable do you perceive a collaboratively-designed course regarding its processes, procedures and outcomes?

2- What factors do you believe might hinder students' contribution to course design if the opportunity were to be provided by the teacher?

Please provide any additional comments:----------

Appendix B

Collaborative Course Design Questionnaire

Dear Professor,

We kindly request your participation in the evaluation of "Collaborative Course Design Questionnaire" which has been developed to investigate students' attitudes toward "Collaborative Course Design" and identify any barriers that might hinder student contribution in this case. The survey is being done by three PhD students majoring in English Language Teaching at the University of Guilan. The purpose of the present questionnaire is to check the content validity of the items which have been taken out of previous comments by educational experts regarding students' attitudes toward "Collaborative Course Design" and barriers to its implementation. We will be grateful if you check the items concerning how relevant and necessary you find them. Your responses, as an educator and expert in the field, will help us to come up with the most relevant and necessary items for the present survey. Thank you so much for your time and cooperation in assisting us in this research undertaking.

Section 1:

Please fill in the required information.

5. Gender: Male ☐ Female ☐

6. Degree: B.A. ☐ M.A. ☐ PhD. ☐

7. Age: ---------- years

8. Teaching experience: ---------- years

Section 2:

Please score each item (on the right columns) and each category of items (on the left columns) based on the following:

The Degree of Relevance:

1= irrelevant 2= moderately relevant 3= relevant but requires revision 4= totally relevant

The Degree of Necessity:

1= not necessary 2= useful but not necessary 3= necessary

	Relevance	Necessity		Relevance	Necessity	Further comments on revision
			Attitudes			
Attitudes	1	1	1. Although collaboration can be more work and take more time, it can also be more fun and enjoyable learning when students take ownership of their own materials or at least projects.	0.82	0.82	
			2. Collaboration on the course design can lead to higher student satisfaction.	1	1	
			3. Collaborative course design can promote interpersonal relationships between teachers and students, so they work together to enhance the educational experience.	1	0.82	
			4. Collaborative course design allows students to understand the details and complexity of the process of course design which results in their consideration for the material and attempt to reflect this understanding in their participation in the activities.	1	0.64	
			5. Collaborative course design can help students feel like they are more in control of their learning.	1	0.82	
			6. Involving students in designing the material they will be studying values their ideas and feedback.	1	1	
			7. Respecting students' views and discussing their feedback in what they study changes the dynamic from a passive consumer to a more active participant.	1	1	
			8. Students and teachers working as peers in developing the course results in more effective courses.	1	0.82	
			9. Through collaborative course design, Students feel empowered to make a difference in the course, and beyond.	1	0.64	
			10. Tailoring the course around the students' needs, goals and preferences turns boring subjects into interesting and engaging ones.	1	1	
			Barriers			
Social and Cultural Barriers	1	1	11. Students' concerns are generally not looked into and considered to be legitimate by the wider community in case of course design, giving them a sense of inferiority.	1	0.64	
			12. The teacher is viewed as a source of information and should be in charge of course development. If teachers ask for collaboration on designing the course, it will be a sign of their incapability of getting it done alone.	1	0.82	
			13. Students generally prefer individual work over group work due to past experiences.	0.82	0.64	
			14. Collaborating on designing the course with the teacher means doing something that was traditionally being done solely by the teacher which brings a sense of fear of challenge to authority.	0.91	0.82	
Educational and Institutional	1	1	15. The present rigid educational system does not consider current job market needs which results in disappointment in student collaboration for its improvement.	0.91	0.82	
			16. Course development and change is brought about only on the basis of feedback from few students who are	0.91	0.64	

			recognized as studious by teachers. Other students' feedback will remain unnoticed.		
			17. Course design and developments are frequently benchmarked with systematic and nationwide practices rather than considering local needs.	1	0.82
			18. Students have not been trained to co-design a course and teachers provide minimal context on how to collaborate on designing a course.	1	1
			19. Deficient educational experiences have resulted in students' demotivation for negotiating the syllabus.	1	1
Individual Barriers	1	1	20. Students have not been properly oriented in terms of knowledge, skills, confidence and capacity to get involved in the design of the course.	1	1
			21. Students are not motivated and encouraged to embark on collaborating on the course design.	1	0.64
			22. When students are given options, they feel anxious and doubtful about the result of their decisions.	0.82	0.64
			23. Co-designing the course needs an increased awareness of the self on the part of the students which is a challenge for them.	1	0.82
			24. Existing facilities do not make room for much positive change regarding the design of the course.	0.91	0.64
Practical Barriers			25. Teachers do not provide a clear structure and understandable explanation on how to cooperate on designing the course together, leading to students' misunderstanding of the process and reluctance to cooperate.	1	0.64
			26. The students have not been trained to consider the learning outcomes and objectives when negotiating the syllabus. Thus, they may come up with impractical ideas about the course which do not match with the curriculum framework.	1	0.82
Attitudinal Barriers	0.91	0.82	27. Only experts' opinions should be solicited for developing and checking the feasibility and relevance of the course.	0.91	0.64
			28. Needs and expectations of stakeholders (school administrators, parents, etc.) always gain priority over students' needs and expectations while designing courses.	0.91	0.82
			29. Students will benefit the best from a teacher-designed course and subsequently a teacher-centered class.	0.91	0.64
			30. Students prefer to remain conservative in getting involved in the process of course design.	0.82	0.64

Appendix C

"Collaborative Course Design Questionnaire"

Dear respondent,

This questionnaire consists of two sections. The first section requires your personal information, and the second section requires that you provide your opinions regarding the statements based on the instructions given. Thank you so much for your time and cooperation in completing the questionnaire.

Section1: Please fill in the following information.

1. Gender: Female ☐ Male☐

2. Field of Study: Humanities ☐ Mathematics and Physics ☐ Experimental Sciences ☐ Other ☐

3. Grade10 ☐ Grade11 ☐ Grade12 ☐

4. Age: -------- years

Section2:

INSTRUCTION

This questionnaire attempts to investigate students' attitudes toward "Collaborative Course Design" and identify any barriers that might hinder students' contribution in this case. The items are presented in statement form. You are requested to read each statement carefully and specify your agreement or disagreement with each statement by putting a tick (✓) mark below strongly disagree, disagree, undecided, agree, or strongly agree which best describes your position. Please do not leave any statement unanswered. There is no time limit. Your responses will be used for research purposes only and the responses will be kept confidential. Your participation is highly appreciated.

	Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	Although collaboration in course design can be more work and take more time, it can also be more fun and enjoyable learning.					
2	Students' concerns are generally not looked into and considered to be legitimate by the wider community in case of course design, giving them a sense of inferiority.					
3	Course development and change is brought about only on the basis of feedback from few students who are recognized as studious by teachers. Other students' feedback will remain unnoticed.					
4	When students are given options, they feel anxious and doubtful about the result of their decisions.					
5	Collaborative course design allows students to understand the details and complexity of the process of course design which results in their consideration for the material and attempt to reflect this understanding in their participation in the activities.					
6	Tailoring the course around the students' needs, goals and preferences turns boring subjects into interesting and engaging ones.					
7	Respecting students' views in what they study changes the dynamic from a passive consumer to a more active participant.					
8	Course design and developments are frequently benchmarked with systematic and nationwide practices rather than considering local needs.					
9	Co-designing the course needs an increased awareness of the self on the part of the students which is a challenge for them.					
10	Collaborative course design can help students feel like they are more in control of their learning.					
11	Collaborative course design can promote interpersonal relationships between teachers and students, so they work together to enhance the educational experience.					
12	Existing facilities do not make room for much positive change regarding the design of the course.					
13	Students and teachers working as peers in developing the course results in more effective courses.					
14	Teachers do not provide a clear structure and understandable explanation on how to cooperate on					

designing the course together, leading to students' misunderstanding of the process and reluctance to cooperate.

15 The present educational system does not consider current job market needs which results in disappointment in student collaboration for its improvement.

16 Students have not been trained to co-design a course and teachers provide minimal context on how to collaborate on designing a course.

17 The students have not been trained to consider the learning outcomes and objectives when negotiating the syllabus. Thus, they may come up with impractical ideas about the course which do not match with the curriculum framework.

18 Involving students in designing the material they will be studying values their ideas and feedback.

19 Through collaborative course design, Students feel empowered to make a difference in the course, and beyond.

20 Students have not been properly oriented in terms of knowledge and skills to get involved in the design of the course.

21 Collaborating on designing the course with the teacher means doing something that was traditionally being done solely by the teacher which brings a sense of fear of challenge to authority.

22 Deficient educational experiences have resulted in students' demotivation for negotiating the syllabus.

23 The teacher is viewed as a source of information and should be in charge of course development. If teachers ask for collaboration on designing the course, it will be a sign of their incapability of getting it done alone.

24 Only experts' opinions should be solicited for developing and checking the feasibility and relevance of the course.

25 Students prefer to remain conservative in getting involved in the process of course design.

26 Students generally prefer individual work over group work due to past experiences.

27 Students will benefit the best from a teacher-designed course and subsequently a teacher-centered class.

28 Collaboration on the course design can lead to higher student satisfaction.

29 Needs and expectations of stakeholders (school administrators, parents, etc.) always gain priority over students' needs and expectations while designing courses.

30 Students are not motivated and encouraged to embark on collaborating in the course design.

Appendix D

Communalities

	Initial	Extraction
1. Although collaboration can be more work and take more time, it can also be more fun and enjoyable learning.	1.000	.899
2. Collaboration on the course design can lead to higher student satisfaction.	1.000	.842
3. Collaborative course design can promote interpersonal relationships between teachers and students, so they work together to enhance the educational experience.	1.000	.659
4. Collaborative course design allows students to understand the details and complexity of the process of course design which results in their consideration for the material and attempt to reflect this understanding in their participation in the activities	1.000	.764
5. Collaborative course design can help students feel like they are more in control of their learning.	1.000	.888
6. Involving students in designing the material they will be studying values their ideas and feedback.	1.000	.830
7. Respecting students' views in what they study changes the dynamic from a passive consumer to a more active participant.	1.000	.845
8. Students and teachers working as peers in developing the course results in more effective courses.	1.000	.734
9. Through collaborative course design, Students feel empowered to make a difference in the course, and beyond.	1.000	.919
10. Tailoring the course around the students' needs, goals and preferences turns boring subjects into interesting and engaging ones.	1.000	.884
11. Students' concerns are generally not looked into and considered to be legitimate by the wider community in case of course design, giving them a sense of inferiority.	1.000	.846
12. The teacher is viewed as a source of information and should be in charge of course development. If teachers ask for collaboration on designing the course, it will be a sign of their incapability of getting it done alone.	1.000	.850
13. Students generally prefer individual work over group work due to past experiences.	1.000	.821
14. Collaborating on designing the course with the teacher means doing something that was traditionally being done solely by the teacher which brings a sense of fear of challenge to authority.	1.000	.655
15. The present educational system does not consider current job market needs which results in disappointment in student collaboration for its improvement.	1.000	.576
16. Course development and change is brought about only on the basis of feedback from few students who are recognized as studious by teachers. Other students' feedback will remain unnoticed.	1.000	.777
17. Course design and developments are frequently benchmarked with systematic and nationwide practices rather than considering local needs.	1.000	.846
18. Students have not been trained to co-design a course and teachers provide minimal context on how to collaborate on designing a course.	1.000	.812
19. Deficient educational experiences have resulted in students' demotivation for negotiating the syllabus.	1.000	.790
20. Students have not been properly oriented in terms of knowledge and skills to get involved in the design of the course.	1.000	.504
21. Students are not motivated and encouraged to embark on collaborating on the course design.	1.000	.652
22. When students are given options, they feel anxious and doubtful about the result of their decisions.	1.000	.591
23. Co-designing the course needs an increased awareness of the self on the part of the students which is a challenge for them.	1.000	.374
24. Existing facilities do not make room for much positive change regarding the design of the course.	1.000	.617
25. Teachers do not provide a clear structure and understandable explanation on how to cooperate on designing the course together, leading to students' misunderstanding of the process and reluctance to cooperate.	1.000	.630
26. The students have not been trained to consider the learning outcomes and objectives when negotiating the syllabus. Thus, they may come up with impractical ideas about the course which do not match with the curriculum framework.	1.000	.693
27. Only experts' opinions should be solicited for developing and checking the feasibility and relevance of the course.	1.000	.681
28. Needs and expectations of stakeholders (school administrators, parents, etc.) always gain priority over students' needs and expectations while designing courses.	1.000	.608
29. Students will benefit the best from a teacher-designed course and subsequently a teacher-centered class.	1.000	.393

30. Students prefer to remain conservative in getting involved in the process of course design.	1.000	.479
Extraction Method: Principal Component Analysis.		

Appendix E

Pattern Matrix[a]

	Components					
	1	2	3	4	5	6
9. Through collaborative course design, Students feel empowered to make a difference in the course, and beyond.	.958					
1. Although collaboration can be more work and take more time, it can also be more fun and enjoyable learning.	.947					
10. Tailoring the course around the students' needs, goals and preferences turns boring subjects into interesting and engaging ones.	.938					
5. Collaborative course design can help students feel like they are more in control of their learning.	.935					
7. Respecting students' views in what they study changes the dynamic from a passive consumer to a more active participant.	.912					
6. Involving students in designing the material they will be studying values their ideas and feedback.	.905					
2. Collaboration on the course design can lead to higher student satisfaction.	.894					
4. Collaborative course design allows students to understand the details and complexity of the process of course design which results in their consideration for the material and attempt to reflect this understanding in their participation in the activities	.881					
8. Students and teachers working as peers in developing the course results in more effective courses.	.808					
3. Collaborative course design can promote interpersonal relationships between teachers and students, so they work together to enhance the educational experience.	.720					
17. Course design and developments are frequently benchmarked with systematic and nationwide practices rather than considering local needs.		.914				
18. Students have not been trained to co-design a course and teachers provide minimal context on how to collaborate on designing a course.		.901				
19. Deficient educational experiences have resulted in students' demotivation for negotiating the syllabus.		.890				
16. Course development and change is brought about only on the basis of feedback from few students who are recognized as studious by teachers. Other students' feedback will remain unnoticed.		.882				
15. The present educational system does not consider current job market needs which results in disappointment in student collaboration for its improvement.		.696				
12. The teacher is viewed as a source of information and should be in charge of course development. If teachers ask for collaboration on designing the course, it will be a sign of their incapability of getting it done alone.			.912			
11. Students' concerns are generally not looked into and considered to be legitimate by the wider community in case of course design, giving them a sense of inferiority.			.898			
13. Students generally prefer individual work over group work due to past experiences.			.888			
14. Collaborating on designing the course with the teacher means doing something that was traditionally being done solely by the teacher which brings a sense of fear of challenge to authority.			.765			
21. Students are not motivated and encouraged to embark on collaborating on the course design.				.793		

22. When students are given options, they feel anxious and doubtful about the result of their decisions.	.743		
20. Students have not been properly oriented in terms of knowledge and skills to get involved in the design of the course.	.708		
23. Co-designing the course needs an increased awareness of the self on the part of the students which is a challenge for them.	.617		
27. Only experts' opinions should be solicited for developing and checking the feasibility and relevance of the course.		.755	
28. Needs and expectations of stakeholders (school administrators, parents, etc.) always gain priority over students' needs and expectations while designing courses.		.703	
30. Students prefer to remain conservative in getting involved in the process of course design.		.684	
29. Students will benefit the best from a teacher-designed course and subsequently a teacher-centered class.		.565	
26. The students have not been trained to consider the learning outcomes and objectives when negotiating the syllabus. Thus, they may come up with impractical ideas about the course which do not match with the curriculum framework.			-.840
25. Teachers do not provide a clear structure and understandable explanation on how to cooperate on designing the course together, leading to students' misunderstanding of the process and reluctance to cooperate.			-.799
24. Existing facilities do not make room for much positive change regarding the design of the course.			-.684
Extraction Method: Principal Component Analysis.			
Rotation Method: Oblimin with Kaiser Normalization.			
a. Rotation converged in 7 iterations.			